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WHAT IS CLAIMED IS:

1.   A queuing congestion mechanism to provide congestion management at an egress port of a packet switch, the queuing congestion mechanism comprising:

a first queue having an input, an output, and a capacity, the first queue operable to receive packets of information of a first type at its input that are destined to be communicated to the egress port through its output;

a second queue having an input, an output, and a capacity, the second queue operable to receive packets of information of a second type at its input that are destined to be communicated to the egress port through its output;

a third queue having an input, an output, and a capacity, the third queue operable to receive packets of information of a third type at its input that are destined to be communicated to the egress port through its output;

a scheduler operable to receive the packets of information from the output of the first queue, the output of the

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second queue, and the output of the third queue, and to

communicate the packets of information to the egress

port of the packet switch based on a schedule; and

a queue shaper operable to set an adjustable rate in which

the packets of information of the third queue are

communicated to the scheduler, wherein the adjustable

rate is controlled by a loading of the capacity of the

second queue.

2.   The queuing congestion mechanism of Claim 1, wherein a

discard policy is enabled for the third queue based on the

loading of the capacity of the second queue.

3.   The queuing congestion mechanism of Claim 2, wherein a

discard policy is enabled for the second queue based on the

loading of the capacity of the second queue.

4.   The queuing congestion mechanism of Claim 3, wherein a

discard policy is enabled for the first queue based on the

loading of the capacity of the second queue.

5.   The queuing congestion mechanism of Claim 1, wherein the first queue is assigned a first priority, the second queue is assigned a second priority that is a lower priority than the first priority, and the third queue is assigned a third priority that is a lower priority than both the second priority and the third priority.

6.   The queuing congestion mechanism of Claim 5, wherein the scheduler is a strict scheduler and the schedule is determined by priorities of the queues.

7.   The queuing congestion mechanism of Claim 5, wherein the scheduler is a weighted fair queuing scheduler and the schedule is determined by weighting the priorities of the queues.

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8.   The queuing congestion mechanism of Claim 1, wherein each queue corresponds to a service category queue.

9.   The queuing congestion mechanism of Claim 1, wherein the packet switch is an ATM switch of an ATM network.

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10. The queuing congestion mechanism of Claim 1, wherein the packet switch is an IP switch of an IP network.

11. The queuing congestion mechanism of Claim 1, wherein the packet switch is a frame relay switch of a frame relay network.

12. The queuing congestion mechanism of Claim 1, wherein the packet switch is an MPLS switch of an MPLS network.

13. The queuing congestion mechanism of Claim 1, wherein the packet switch is an Ethernet switch of an Ethernet network.

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14.   A packet switch with at least one queuing congestion

mechanism for use in a packet network that includes a plurality

of packet switches in communication through a plurality of

telecommunications links, the packet switch comprising:

> a plurality of ingress ports, each of the plurality of
>
> > ingress ports operable to receive packets of
> >
> > information from one of the plurality of
> >
> > telecommunications links of the packet network;
>
> a plurality of egress ports, each of the plurality of egress
>
> > ports operable to communicate packets of information to
> >
> > one of the plurality of telecommunications links of the
> >
> > packet network;
>
> a switch matrix operable to receive packets of information
>
> > from the plurality of ingress ports, to perform packet
> >
> > switching on the packets of information, and to
> >
> > communicate the packets of information to a designated
> >
> > one of the plurality of egress ports; and
>
> at least one queuing congestion mechanism operable to
>
> > provide congestion management at one of the plurality
> >
> > of egress ports, the congestion mechanism including:

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a first queue having an input, an output, and a

    capacity, the first queue operable to receive

    packets of information of a first type at its

    input that are destined to be communicated to the

    egress port through its output,

a second queue having an input, an output, and a

    capacity, the second queue operable to receive

    packets of information of a second type at its

    input that are destined to be communicated to the

    egress port through its output,

a third queue having an input, an output, and a

    capacity, the third queue operable to receive

    packets of information of a third type at its

    input that are destined to be communicated to the

    egress port through its output,

a scheduler operable to receive the packets of

    information from the output of the first queue,

    the output of the second queue, and the output of

    the third queue, and to communicate the packets of

    information to the egress port of the packet

    switch based on a schedule, and

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a queue shaper operable to set an adjustable rate in

which the packets of information of the third

queue are communicated to the scheduler, wherein

the adjustable rate is controlled by a loading of

the capacity of the second queue.

15. The packet switch of Claim 14, wherein a discard policy

is enabled for the third queue based on the loading of the

capacity of the second queue.

16. The packet switch of Claim 14, wherein the packet

network is an ATM network and the packet switch is an ATM switch.

17. The packet switch of Claim 14, wherein the packet

network is an MPLS network and the packet switch is an MPLS

switch.

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18. A method for performing queuing closed loop congestion

management in a packet switch of a packet network, the method

comprising:

     monitoring the loading of the capacity of a first queue, a

          second queue, and a third queue to hold packets of

          information communicated through the packet network,

          each queue associated with an egress port of the packet

          switch and associated with different levels of service;

     setting an adjustable data rate to communicate the packets

          of information of the third queue to a scheduler,

          wherein the adjustable data rate is controlled by the

          loading of the capacity of the second queue;

     scheduling the communication of the packets of information

          from the first queue, the second queue, and the third

          queue to the egress port of the packet switch based on

          a schedule; and

     enabling a discard policy for the third queue based on the

          loading of the capacity of the second queue.